

Project Controls Expo, Australia – 26th November 2019

Melbourne Cricket Ground, Melbourne



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“Visioning and Validating”

The Changing Risk Profile of Transportation Projects

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Why do we have Project Controls?

“It is not the strongest of the species that survives, nor the most intelligent. It is the one most adaptable to change.”

Charles Darwin

Projects are the vehicles for change.



Why do we have Project Controls ?



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Why have Transportation Project Controls?



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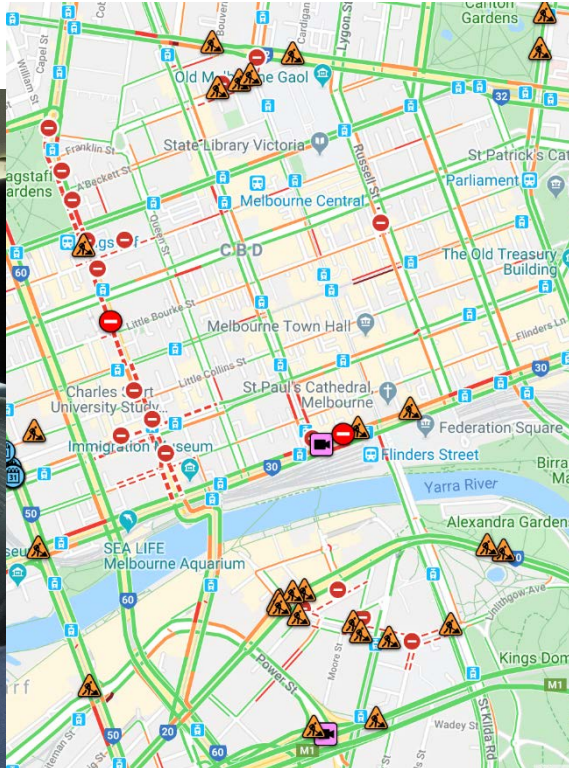
Why have Transportation Project Controls?

Ensure that Communities are receiving benefits by:

- Doing the Right Projects
- Doing the Projects Right








What is happening now?



What is happening now?

Transport sector: Policy rating

	 Low	 medium	 high	 frontrunner
 Phase-out fossil fuel vehicles	No policy for reducing emissions from light duty vehicles	Some policies such as energy/emissions performance standards or bonus/malus support	Policies + national target to phase out fossil fuel LDVs	Policies – Ban on new fossil-based LDVs by 2035
	Australia Indonesia Russia	Argentina Brazil China EU Germany India Italy	Mexico Saudi Arabia South Africa South Korea Turkey US	Canada France Japan UK

	 Low	 medium	 high	 frontrunner
 Decarbonise heavy duty vehicles	No policy	Some policies such as energy/emissions performance standards or support	Policies + strategy to reduce absolute emissions from freight transport	Policies – innovation strategy to phase-out emissions from freight transport by 2050
	Australia Indonesia Russia Saudi Arabia South Africa Turkey	Argentina Brazil Canada China EU France Germany	India Italy Japan South Korea UK US	

	 Low	 medium	 high	 frontrunner
 Modal shift in (ground) transport	No policy	Some policies such as support programmes to shift to rail or non-motorised transport)	Policies + longer-term strategy	Policies – longer-term strategy consistent with 1.5°C pathway
	Australia Russia	Argentina Brazil Canada China EU France Germany India Indonesia	Italy Japan Mexico Saudi Arabia South Africa South Korea Turkey US	

Australian Infrastructure Audit 2019



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Mind the gap!

Cost estimate (nominal, \$ millions)				
Project	State	Median (or "P50")	"Worst case" (or "P90")	Difference
Inland Rail	National	9 890	10 660	7.8%
Western Distributor	Vic	5 226	5 548	6.2%
Maldon Dombarton Rail Link	NSW	766	806	5.2%
Melbourne Metro	Vic	10 154	10 837	6.7%
Canberra Light Rail	ACT	759	806	6.5%
Actual average difference, all projects completed in past 15 years				26.0%



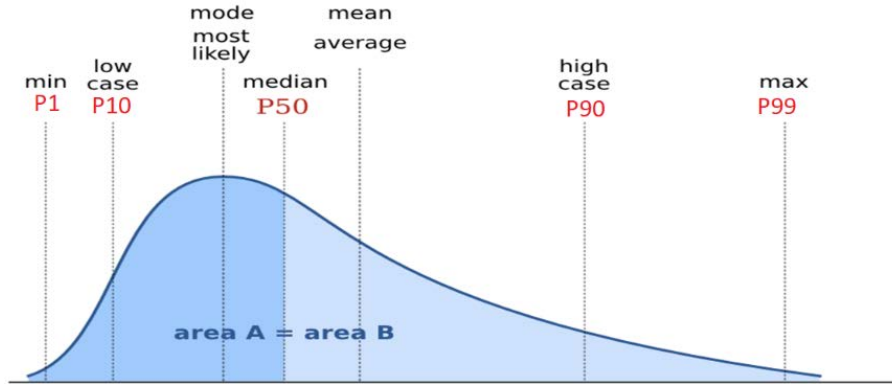
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Tip for Owners: sense check the gap between P50 and P90!



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Misused Statistics



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Tip for Owners: don't use P50 for budgeting!



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Who does these business cases?



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What is the future?



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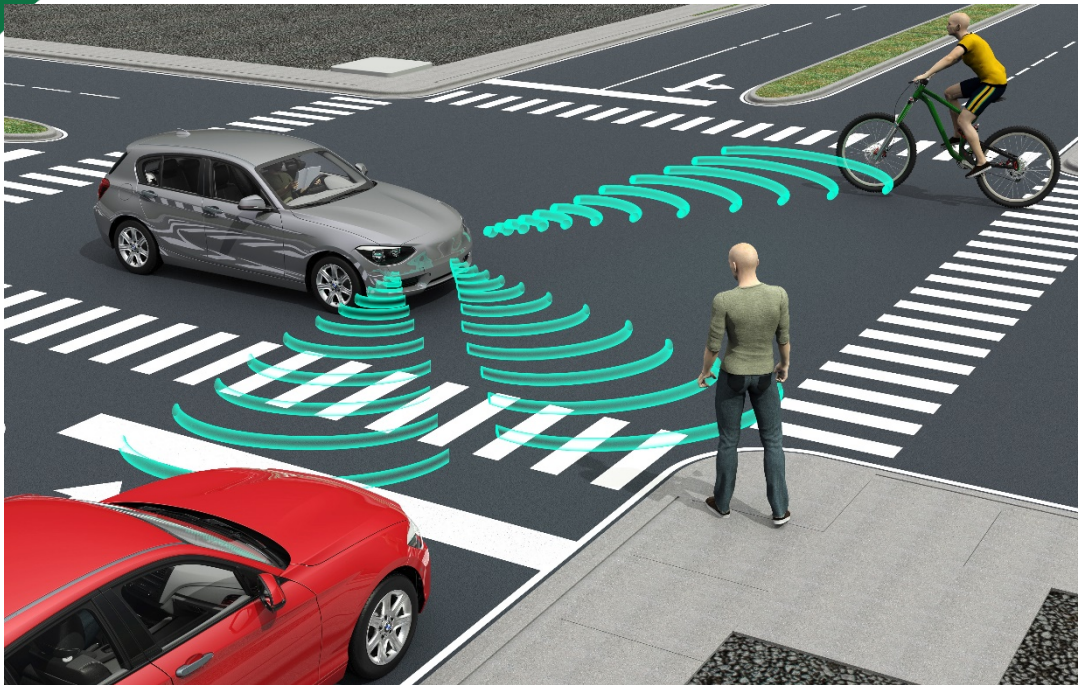


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What is the future?



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What is the future?



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Benefits



UP TO 25% of greenhouse gas emissions reduced

UP TO

\$735 million worth of health benefits



\$14.9 billion increase in Gross State Product in 2046



UP TO 94% of road accidents reduced



UP TO 50% reduced car operating costs

Costs



UP TO \$1.7 billion to upgrade mobile networks



APPROXIMATELY \$250 million for improved line markings on roads



AT LEAST \$2.2 billion for energy network upgrades

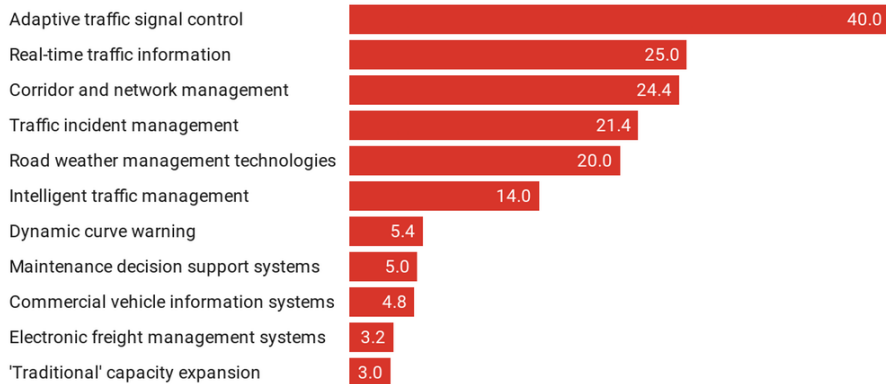
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What is the future?



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Average* benefit-cost ratios of transport investments



* Values vary depending on many factors, including base conditions used for comparison



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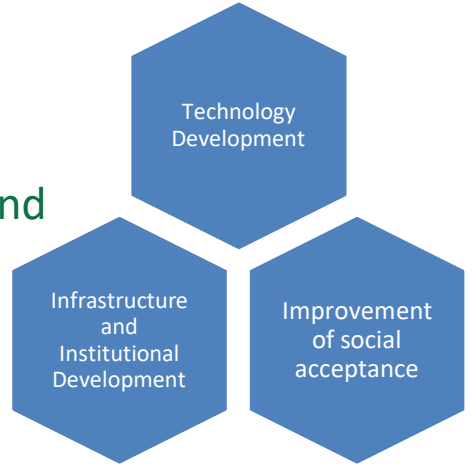
How to navigate through the uncertainty?

World leaders are the Japanese:

- 1) Form consensus on the future image and Identify cooperative areas”.
- 2) Demonstration projects.

Infrastructure Audit:

- 1) “Vision and Validate”

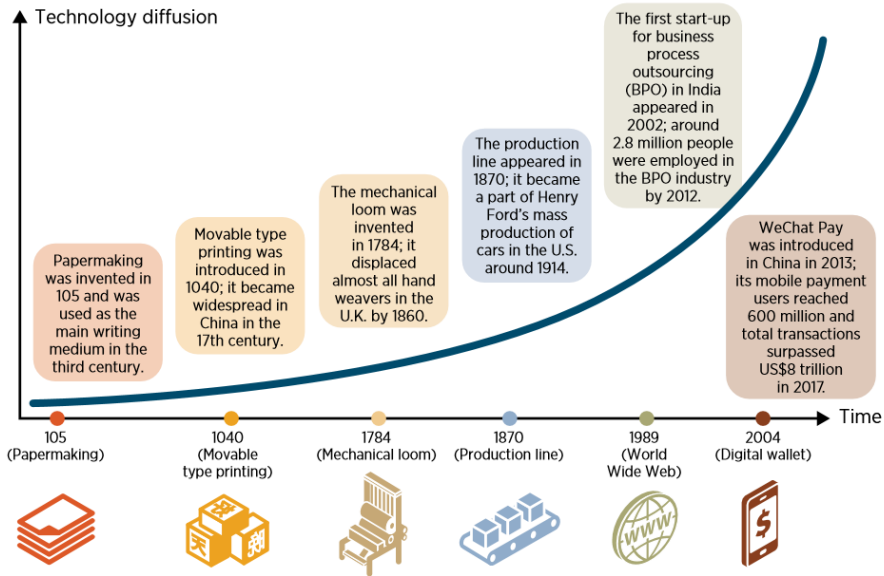


How to prepare?



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FIGURE 4.2 The rate of technology diffusion is increasing



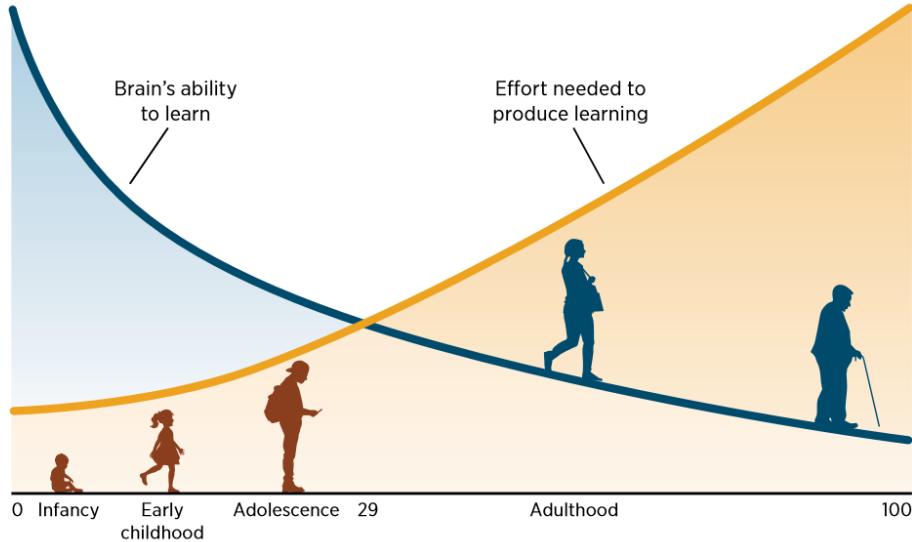
Source: WDR 2019 team.

How to prepare?



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FIGURE 4.3 The brain's ability to learn from experience decreases with age



Source: WDR 2019 team.

What does this mean for project controls?



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What does this mean for project controls?



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- 1) Greater focus on risk
- 2) More 'agile' type methodologies
- 3) Competencies
- 4) Continuous learning



What does this mean for project controls?



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Competency and Capability

- 1) Risk analysis
- 2) People and change management
- 3) Systems thinking
- 4) Software development cycles
- 5) **Continuous micro learning**



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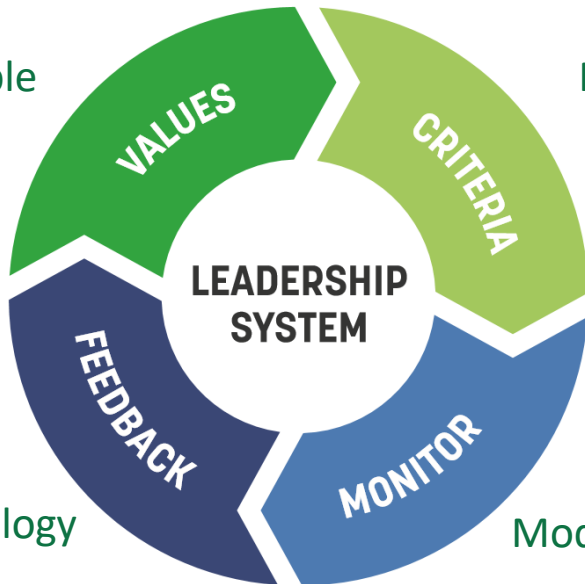
What does this mean for project controls?



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People

People



Models / Technology

Models / Technology



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What if?



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- **Business case assurance was done properly?**
- **A chartered cost or risk engineer had to sign off?**
- **Smart transport solutions were given higher priority?**



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Questions?



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